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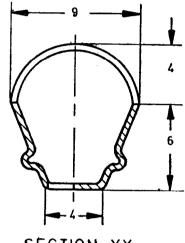


Indian Standard

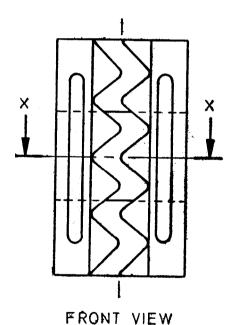


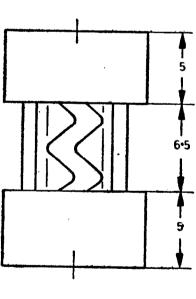
# SPECIFICATION FOR RANEY CLIPS AND CLIP APPLICATOR

- 1. Scope Dimensions, material and other requirements for Raney clips and clip applicator used in neurosurgery.
- 2. Shape and Dimensions As shown in Fig. 1 and 2.



SECTION XX





REAR VIEW

All dimensions in millimetres.

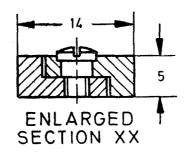
FIG. 1 RANEY CLIP

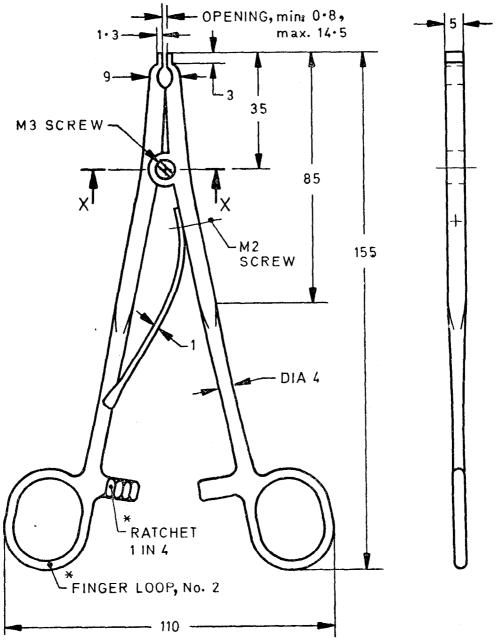
2.1 A deviation of  $\pm 2.5$  percent shall be allowed on all dimensions.

Adoptd 23 February 1979

September 1979, ISI







\*See IS: 3642-1966 ' General requirements for surgical instruments'.

All dimensions in millimetres.

FIG. 2 APPLICATOR, RANEY CLIP

### 3. Material

- 3.1 Clips Stainless steel sheet of 0.40 mm thickness conforming to Designation 30Cr13 of IS: 6911-1972 'Specification for stainless steel plate sheet and strip'.
- 3.2 Clip Applicator Arms of the applicator shall be made from stainless steel conforming to Designation 40Cr13 of IS:6603-1972 Specification for stainless steel bars and flats'. The spring

shall be of stainless steel strip conforming to Designation 30Cr13 of IS: 6911-1972.

#### 4. Workmanship and Finish

#### 4.1 Clips

- 4.1.1 The clip shall be formed in one piece. It shall be free from burrs, sharp edges and other defects.
- 4.1.2 The teeth shall be reasonably sharp so that they provide an affective grip but do not pierce into the skin.

#### 4.2 Applicator

- 4.2.1 The applicator shall be free from scale, burrs, cracks, pits, toolmarks and other surface defects.
- **4.2.2** The joint, the finger loops and the spring assembly shall be as shown in Fig. 2. All edges and the corners of the applicator shall be smoothly rounded off.
  - 4.2.3 The spring action shall be neither too hard nor slack. There shall be no play at the joint.
- 4.3 The clips and the applicator shall be finished bright and passivated.
- 5. Heat Treatment The clips and the spring for applicator shall be hardened and tempered to a hardness of 400 to 450 HV. The applicator arms shall be uniformly hardened and tempered to a hardness of 500 to  $560\ HV$ .

#### 6. Tests

- **6.1** Flexibility Take a piece of hard rubber 8 mm thick and grip it within the clip with the help of the applicator. Now remove the clip. Repeat it 10 times. There shall be no permanent set in the clip.
- 6.2 Corrosion Resistance Subject the clips and the applicator to boiling and autoclaving test in accordance with IS: 7531-1975 'Method for boiling and autoclaving test for corrosion resistance of stainless steel surgical instruments'.
- 7. Marking Each applicator and clip shall be marked by etching or otherwise with the manufacturer's name, initials or registered trade-mark and the word 'Stainless'.
- 7.1 ISI Certification Marking Details available with the Indian Standards Institution.
- 8. Packing As agreed to between the purchaser and the supplier.